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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/050,259	01/16/2002	Horst Greiner	DE010020	9232

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EXAMINER

TSIDULKO, MARK

ART UNIT PAPER NUMBER

2875

DATE MAILED: 05/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/050,259

Applicant(s)

GREINER, HORST

Examiner

Mark Tsidulko

Art Unit

2875

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8,9,12 and 18-20 is/are allowed.
- 6) ☒ Claim(s) 1-5,7,10,11 and 13-17 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. The submission of the amendment filed on 2/26/03 is acknowledged. At this point the Abstract and claims 1-13 have been amended and new claims 14-20 have been added. Thus, claims 1-20 are at issue in the instant application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims **1-5, 10, 11, 13-17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Torihara et al. (U.S. 4,714,983) in view of Lee et al. (US 6,295,105).

Referring to Claim 1 Torihara et al. disclose (Fig. 12) a backlighting device having a plurality of channels (housings) [122] for accommodating linear light source. Coupling of the light into the light guide plate [21] takes place through side wall [4] (see Fig.13B).

Torihara et al. discloses the instant claimed invention except for reflecting layer at upper side of the channel.

Lee et al disclose (Fig.2) a reflecting layer [124] covering the light source and facing the light emitting surface. This reflecting layer is used for reflecting the light emitted from the light source.

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the upper side of the channel of Torihara et al. with reflecting layer as taught by Lee et al. for purpose of reflecting the light emitted from the light source.

3. Referring to Claims **2, 14** Torihara et al. discloses (Fig.12) that the side wall of the channels extends perpendicularly to the light emission surface and the upper side of the channel extend parallel to the light emission surface.

4. Referring to Claims **3, 15** Torihara et al. disclose the instant claimed invention except for the lower side of the channel is covered with a reflecting layer.

Lee et al. disclose (Fig.2) the reflecting layer [124] covering the lower side of the light housing. It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the reflecting layer of Lee et al. at lower side of the channel of Torihara et al. opposite to the upper side in order to minimize loss of the light beams generated from the light source.

5. Referring to Claims **4, 16** Torihara et al. disclose that the channels have rectangular cross-section.

6. Referring to Claims **5, 17** Torihara et al. disclose (Fig. 2) that the channels are embedded in a lower side of the optical guide plate [3] opposed to the light emission surface.

7. Referring to Claims **10, 11** Torihara et al. and Lee et al. disclose the instant claimed invention except for the first reflecting layer has a continuation in the form of a first portion extending in horizontal direction into the optical waveguide plate.

Lee et al. disclose (Fig.2) the first reflecting layer has a continuation in the form of a first portion extending in horizontal direction into the optical waveguide plate. While Lee et al. show this continuation at only one side of the housing it will of course be understood that continuation may be provided at both sides.

It would have been obvious to one having ordinary skill in the art, at the time the invention was made to provide the first reflecting layer having continuation in the form of a first portion extending in horizontal direction into the optical waveguide plate as taught by Lee et al. for device of Torihara et al. in order to avoid undesirable stray light to generate at the edges of the channel. It is also obvious that the continuation portion can be bent down to obtain the form extending along the side wall of the channel.

8. Referring to Claim **13** Torihara et al. disclose a LCD device with a lighting device as claimed in claim **1** (col.6, lines 65-67).

9. Claim **7** is rejected under 35 U.S.C. 103(a) as being unpatentable over Torihara et al. and Lee et al. as applied to claim **1** above, and further in view of Bechtel et al. (U.S. 2001/0043294).

Torihara et al. and Lee et al. disclose the instant claimed invention except for the light source is a low-pressure gas discharge lamp.

The fluorescent low-pressure gas discharge lamp is well known in the art and widely used to provide illumination in illumination devices because they are more efficient than incandescent bulbs in generating light. The lamp, usually in the form of a tubular bulb with an electrode sealed into each end, contains mercury vapor at low pressure with a small amount of inert gas.

As shown in Bechtel et al. reference the low-pressure gas discharge lamp is used as light source for liquid crystal color display (page 1, [0007]).

It would have been obvious to one having ordinary skill in the art, at the time the invention was made to provide the low-pressure gas discharge lamp as taught by Baechtelet al. for device of Torihara et al. and Lee et al in order to obtain more efficient light generation.

Allowable Subject Matter

10. Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims because the prior art of record fails to show a guide plate having a plurality of optical elements in which the channels are provided and which are optically fixedly connected to the lower side of the optical waveguide plate opposite to the light emission surface.

Claims 8, 9, 12, 18-20 are allowed.

The following is an examiner's statement of reasons for allowance:

11. Referring to Claims 8, 18 the prior art of record fails to show the second reflecting layer extends over the lateral surfaces and the lower side of the optical waveguide plate.

12. Claims 9, 19 are allowed as claims depended on claim 8.

13. Referring to Claims **12, 20** the prior art of record fails to show that the edges of the channels situated opposite the upper side are surrounded by a third reflecting layer.

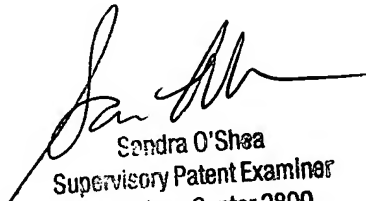
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Tsidulko whose telephone number is (703)308-1326. The examiner can normally be reached on 8 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (703) 305-4939. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703)308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

M.T.
May 5, 2002


Sandra O'Shea
Supervisory Patent Examiner
Technology Center 2800